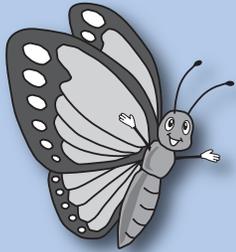


# AQI Detectives

ACTIVITY

8



## Learning Objective:

- Understand the Air Quality Index and learn how to find the daily air quality.

## Subjects

- Health
- Social Studies

## Materials

- Computer with internet access
- Crayons, colored pencils, or markers
- AQI student worksheet

## Teacher's Background Information

**NOTE:** If students have not completed activities *Does Clear Air = Clean Air?* or *The Clean Air Act*, teachers may want to discuss where air pollution comes from and how it affects our health.

Wisconsin's Air Quality is generally good, but occasionally becomes unhealthy. The Air Quality Index (AQI) is a tool used to tell people the daily air quality. It uses 4 colors to convey the quality of the air: green is good, yellow is moderate, orange is unhealthy for sensitive groups, and red is unhealthy for everyone. Associated with the colors are AQI values. The lower the AQI value, the cleaner the air. AQI values of 0–50 are good, 51–100 are moderate, 101–150 are unhealthy for sensitive groups, and 151–200 are unhealthy for everyone.

Included in the sensitive group are:

- People with asthma or other respiratory illnesses
- Children
- Older adults
- People with heart disease
- Those who work outdoors
- Those who exercise or spend extended periods of time outdoors

Those sensitive to air pollution should limit outdoor exposure and avoid strenuous activities on days with poor air quality. DNR will issue an Air Quality Advisory (AQA) when the level of air pollutants have reached or exceeded the orange range.

The health effects of air pollution on humans may occur immediately, after a few hours, or even after a few days. Though it can be difficult to see or smell air pollution, we are still breathing it deep into our lungs with each breath. Exposure to air pollutants can cause eyes, nose and throat irritation, shortness of breath, coughing, wheezing, or chest pain. Air pollution can also increase the severity and occurrence of asthma attacks, aggravate emphysema, chronic bronchitis and other lung ailments, and can also affect those with heart disease.

There are many ways to find current air quality conditions in your area, or see if an AQA has been issued. You can:

1. Log on to Air Now (<http://www.airnow.gov/>) and click on your state.
2. Check the DNR website (<http://dnr.wi.gov/air/aq/health/status.asp>)
3. Sign up to receive e-mail notification from the DNR when an AQA is called ([http://dnr.wi.gov/air/aq/health/status\\_county.asp](http://dnr.wi.gov/air/aq/health/status_county.asp)).
4. Check many weather forecast sites or stations including [www.weatherunderground.com](http://www.weatherunderground.com), a newspaper, weather radio, or TV weather sites.

### Student Worksheet Answers

What is the current AQI?

Example: Milwaukee

Color: green AQI #: 32 Conditions: good

What is the forecast for tomorrow?

Color: yellow Conditions: moderate

Fill in the AQI chart below:

Air Quality Index Values	Levels of Health Concern	Colors
<i>When the AQI is in this range:</i>	<i>... air quality is:</i>	<i>... as shown by this color:</i>
<b>0 to 50</b>	<b>Good</b>	<b>Green</b>
<b>51 to 100</b>	<b>Moderate</b>	<b>Yellow</b>
<b>101 to 150</b>	<b>Unhealthy for Some People</b>	<b>Orange</b>
<b>151 to 200</b>	<b>Unhealthy</b>	<b>Red</b>

### Remember:

- Teachers, please remember to post or make available the **bold-faced** vocabulary word definitions in each activity (*see the glossary on page 65 for definitions*).

# AQI Detectives



Have you ever heard of a thunderstorm, tornado, or winter weather advisory? Of course you have. An advisory is called when bad weather is happening – weather that could be dangerous!

Have you ever heard of an **Air Quality Advisory (AQA)**? Air Quality Advisories are just like thunderstorm, tornado, or winter weather advisories. This is the warning system used to alert people when the quality of the air is poor and might affect their health. Remember, if you have **asthma** or are sensitive to **air pollution** you will want to know when the air quality is going to be bad.



# AQI

## Let's find out what the quality of the air is today...

First we need to learn about the AQI, or **Air Quality Index**. This is a tool we use to show if the air is clean or dirty.

Air Quality Index Values	Levels of Health Concern	Colors
<i>When the AQI is in this range:</i>	<i>... air quality is:</i>	<i>... as shown by this color:</i>
<b>0 to 50</b>	<b>Good</b>	<b>Green</b>
<b>51 to 100</b>	<b>Moderate</b>	<b>Yellow</b>
<b>101 to 150</b>	<b>Unhealthy for Some People</b>	<b>Orange</b>
<b>151 to 200</b>	<b>Unhealthy</b>	<b>Red</b>



Just like a stoplight, green means go and red means stop! If the air quality is green, it means it is good and there is almost no pollution in the air so we can go outside and play. If the air quality is in the yellow range, there is some air pollution floating around in the air, but most people won't notice it, so we can still play outdoors.

If the air quality gets into the orange range, sensitive people might begin to feel the effects of poor air quality. (Who is in the sensitive group? Do you know? Check out the box below to find out.) People in the sensitive group should really be careful and slow down outdoors on these days. If the air quality reaches the red range, everyone will begin to feel the effects of air pollution! Yikes!

Luckily in Wisconsin, we don't see the red AQI range very often at all. We do see a few orange days, but most of our days are in the green and yellow ranges.

### The Sensitive Group

Listed here are people included in the "sensitive to air pollution" group.

- people with asthma
- kids
- older adults
- people with other respiratory illnesses
- people with heart problems
- people who work or do strenuous exercise outdoors.

### Where does our air pollution come from?

Well...all over the place! Air pollution is released into the air from cars, trucks, factories, and power plants. Each time we drive our car, turn on a light in our house, or have a fire in our fireplace, we release small amounts of pollution into the air. Over time it can really add up! This is why it is important to keep our air clean and reduce air pollution whenever we can.



**Let's use the AQI chart to figure out the air quality today!**

Log on to the Internet and visit AirNow (<http://www.airnow.gov/>). Click on the state of Wisconsin on the U.S. map. Now, look through the cities listed and find the city that is closest to where you live.

What is the current AQI?

Color: \_\_\_\_\_

AQI #: \_\_\_\_\_

Conditions: \_\_\_\_\_

What is the forecast for tomorrow?

Color: \_\_\_\_\_

Conditions: \_\_\_\_\_



<b>Air Quality Index Values</b>	<b>Levels of Health Concern</b>	<b>Colors</b>
<i>When the AQI is in this range:</i>	<i>... air quality is:</i>	<i>... as shown by this color:</i>
<b>0 to 50</b>		
<b>51 to 100</b>		
<b>101 to 150</b>		
<b>151 to 200</b>		